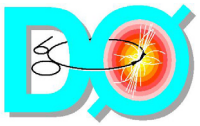
Review of Downtime Procedures

- During recorded Physics runs
- Only the DAQ Shifter should issue scl_inits!
- Reasons to pause the run:
  - Muon readout has stopped (L2 100%)
    - redownload/restart from Muon readout_client
  - Front End Busy (L1 100%): CFT/SMT/CAL
  - Missing or incomplete events
    - All L3 input becomes red in jMon
  - Alarm Watcher condition
    - E.g.: High Voltage trips



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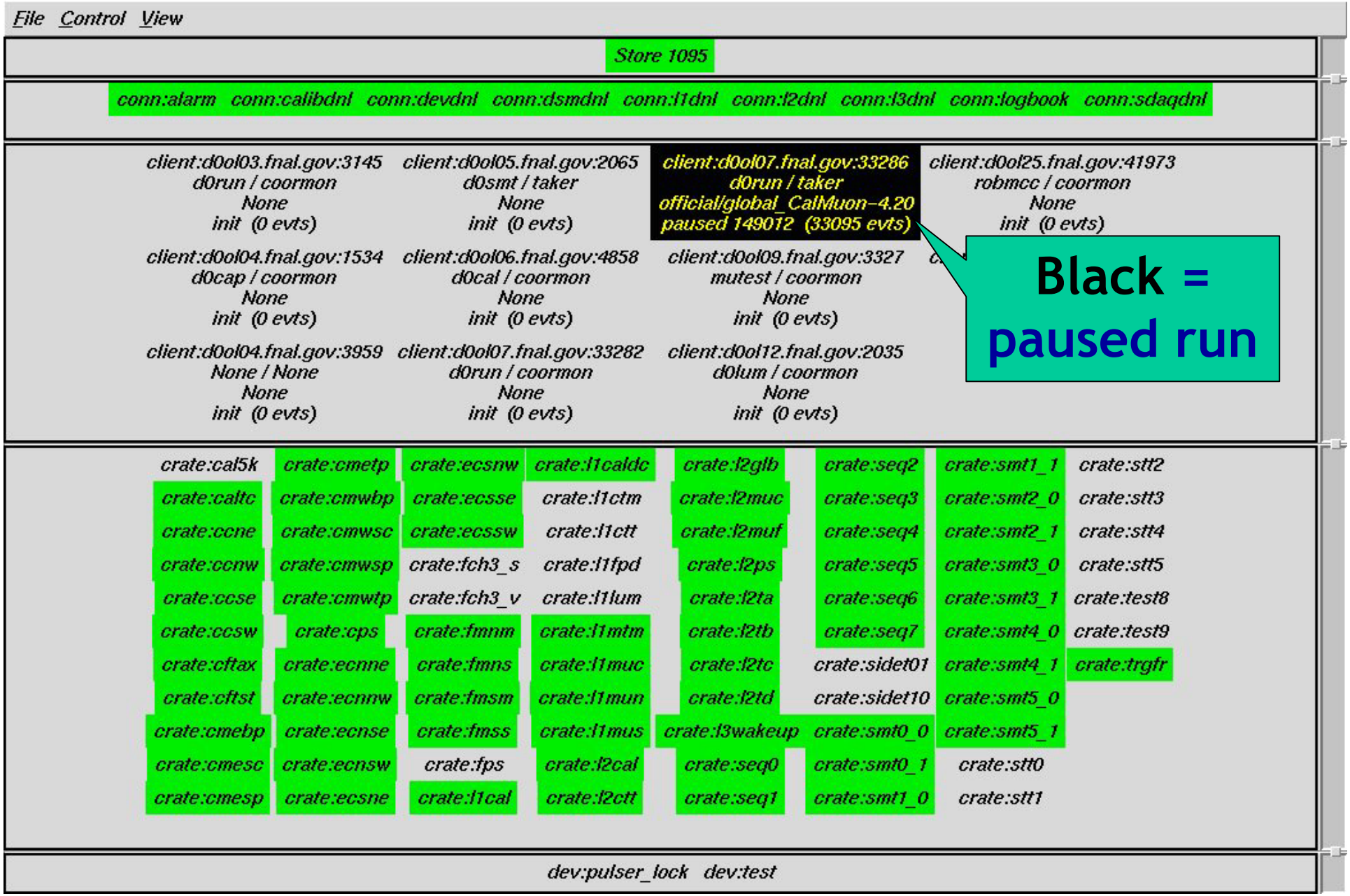
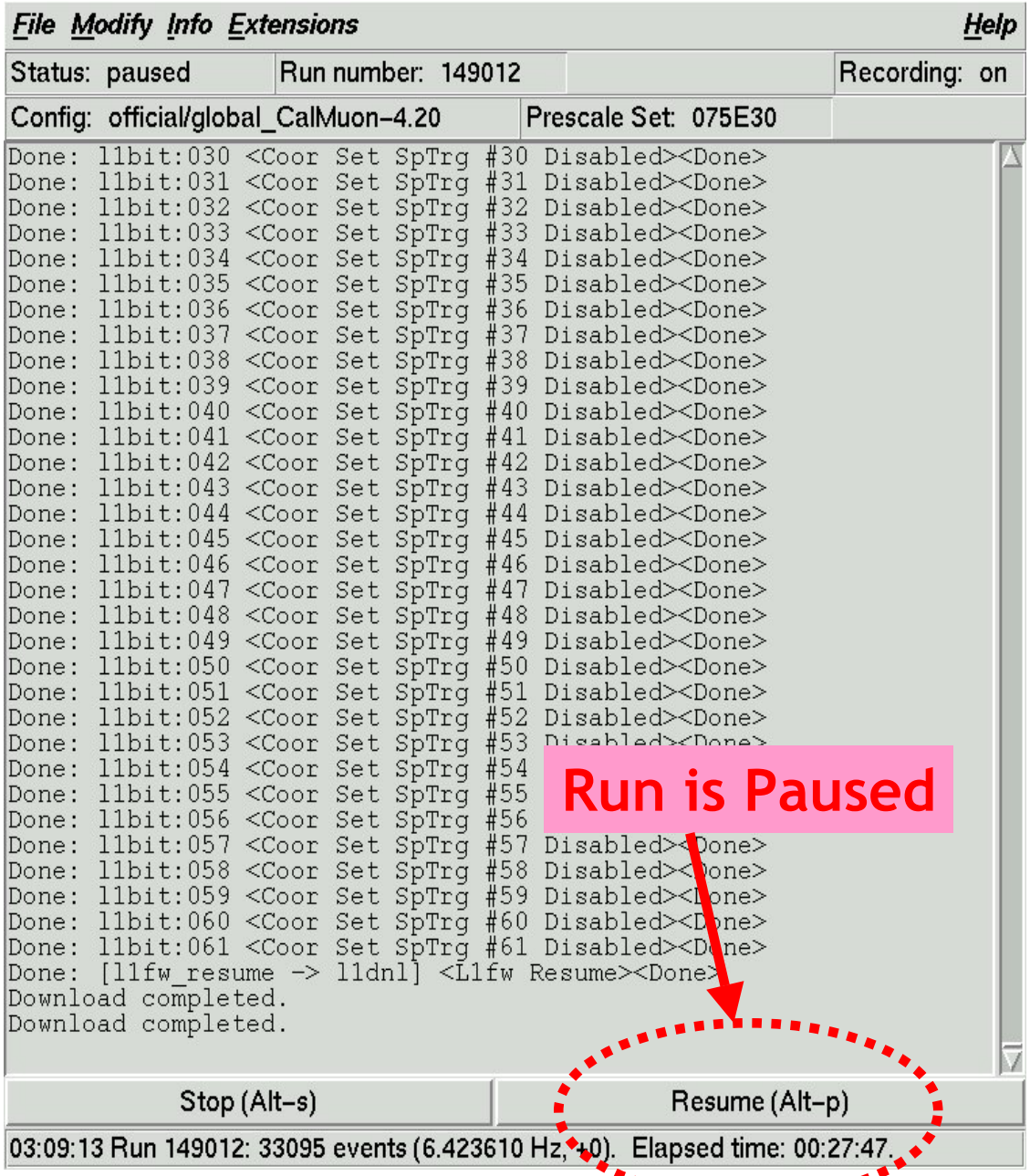
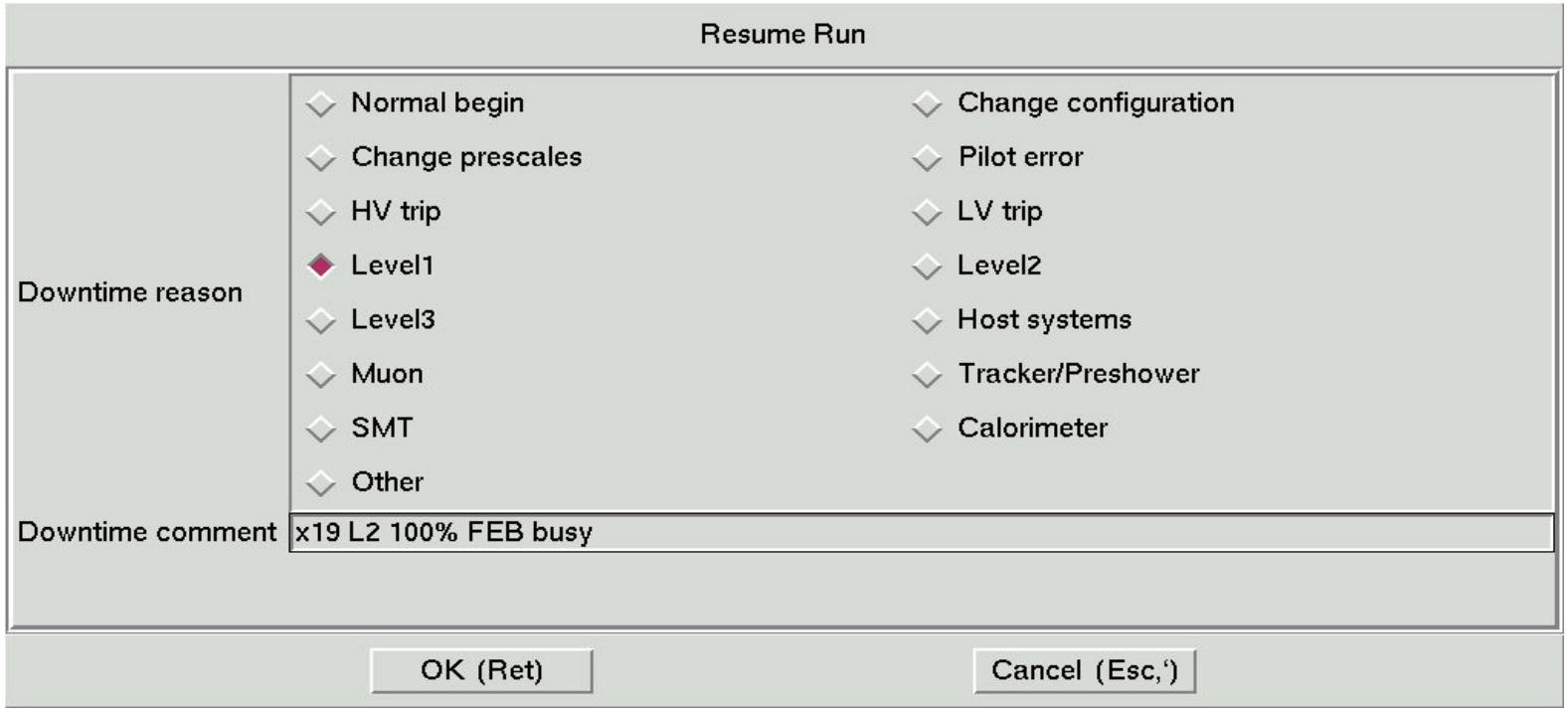

File Control View
Store 1095
conn:alarm conn:calibdnl conn:devdnl conn:dsmdnl conn:l1dnl conn:l2dnl conn:l3dnl conn:logbook conn:sdaqdnl
client:d0ol03.fnal.gov:3145
d0run / coormon
None
init (0 evts)
client:d0ol05.fnal.gov:2065
d0smt / taker
None
init (0 evts)
client:d0ol07.fnal.gov:33286
d0run / taker
official/global_CalMuon-4.20
paused 149012 (33095 evts)
client:d0ol25.fnal.gov:41973
robmcc / coormon
None
init (0 evts)
client:d0ol04.fnal.gov:1534
d0cap / coormon
None
init (0 evts)
client:d0ol06.fnal.gov:4858
d0cal / coormon
None
init (0 evts)
client:d0ol09.fnal.gov:3327
mutest / coormon
None
init (0 evts)
client:d0ol04.fnal.gov:3959
None / None
None
init (0 evts)
client:d0ol07.fnal.gov:33282
d0run / coormon
None
init (0 evts)
client:d0ol12.fnal.gov:2035
d0lum / coormon
None
init (0 evts)
Black = paused run
crate:cal5k
crate:caltc
crate:ccne
crate:ccnw
crate:ccse
crate:ccsw
crate:cftax
crate:cftst
crate:cmebp
crate:cmesc
crate:cmesp
crate:cmetp
crate:cmwbp
crate:cmwsc
crate:cmwsp
crate:cmwtp
crate:cps
crate:ecnne
crate:ecnnw
crate:ecnse
crate:ecnsw
crate:ecsne
crate:ecsnw
crate:ecsse
crate:ecssw
crate:fch3_s
crate:fch3_v
crate:fmnm
crate:fmns
crate:fmsm
crate:fmss
crate:fps
crate:l1cal
crate:l1caldc
crate:l1ctm
crate:l1ctt
crate:l1fpd
crate:l1lum
crate:l1mtm
crate:l1muc
crate:l1mun
crate:l1mus
crate:l2cal
crate:l2ctt
crate:l2glb
crate:l2muc
crate:l2muf
crate:l2ps
crate:l2ta
crate:l2tb
crate:l2tc
crate:l2td
crate:l3wakeup
crate:seq0
crate:seq1
crate:seq2
crate:seq3
crate:seq4
crate:seq5
crate:seq6
crate:seq7
crate:sidet01
crate:sidet10
crate:smt0_0
crate:smt0_1
crate:smt1_0
crate:smt1_1
crate:smt2_0
crate:smt2_1
crate:smt3_0
crate:smt3_1
crate:smt4_0
crate:smt4_1
crate:smt5_0
crate:smt5_1
crate:stt0
crate:stt1
crate:stt2
crate:stt3
crate:stt4
crate:stt5
crate:test8
crate:test9
crate:trgfr
dev:pulser_lock dev:test

Pause/Resume Run

- The current rate of +0 is telling you that zero events have been collected in the last fifteen seconds.
- After clicking on the Resume button, a taker dialogue will pop-up. You *must* take the time to accurately record the downtime. Do not resume before a radio button is clicked & a comment is noted…



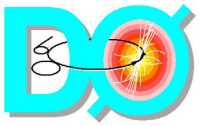
Resume Run Taker Dialogue



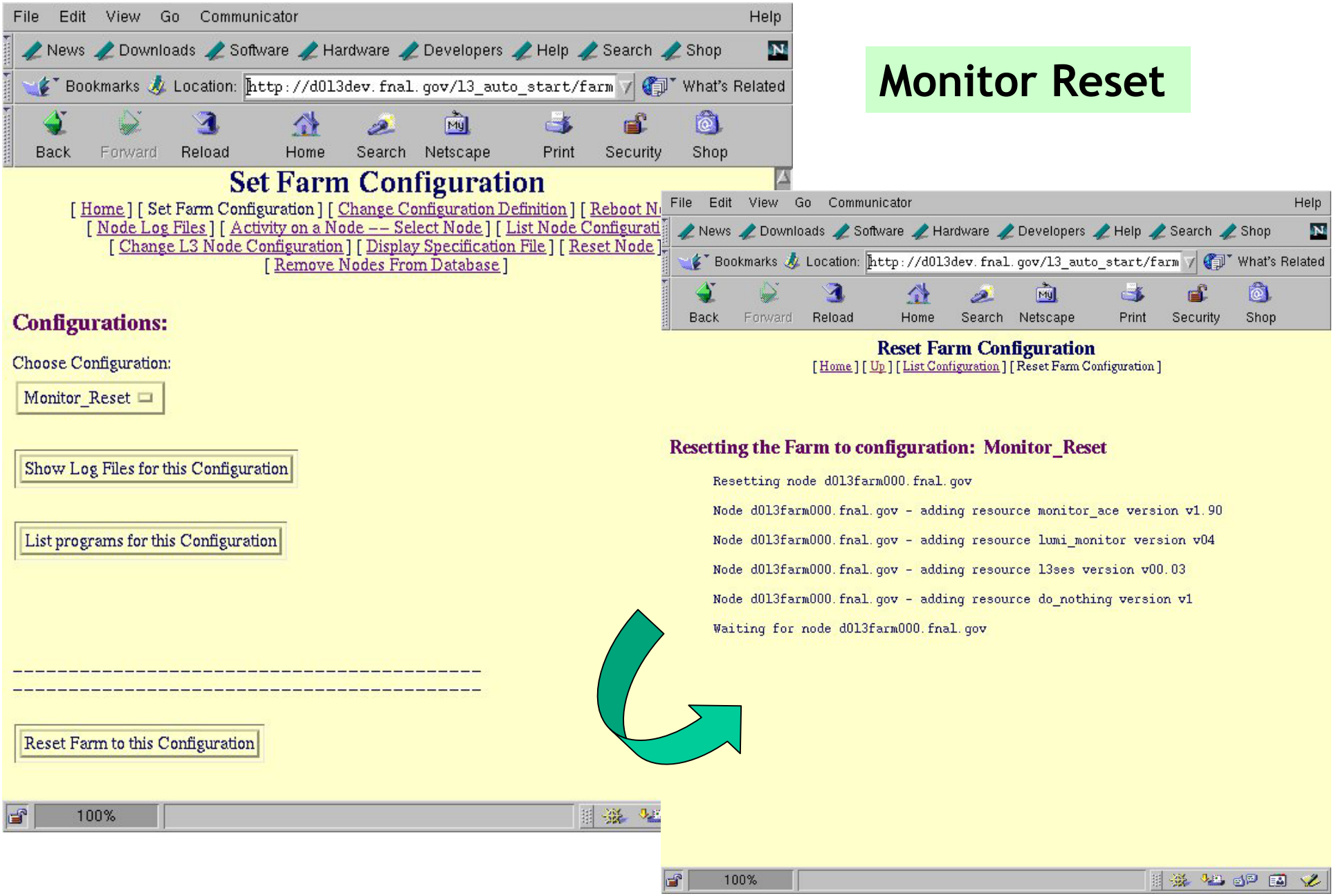
- Learn the difference between L1 Muon (x16,17,18,19) Crates & L2 (x21,22) & Muon Readout (x30-3b) - Common mistake!
- Comment should include which crate & reason if known
- Pilot error = DAQ Shifter mistake (oops!)
- Get an "OK" confirmation from detector shifter before you click the OK button.

Special Features

- *Resume Run* issues scl_init automatically
  - Muon readout crate stays in Waiting for Init state after Resume - issue scl_init from Coormon
- Do not pause the run for VRC resets
  - Can make situation worse
    - Record this downtime in logbook
    - VRCs will disappear in a couple of months
- VRC states in jMon appears to hang, but data taking is unaffected
  - One will see yellow bar & -1.0 Hz
  - Try a Monitor_Reset from L3 Farm Configuration Page
    - Not necessary to stop/pause the run
    - L3 group aware of this problem & Andy Haas is working on it



Monitor Reset



More Special Features

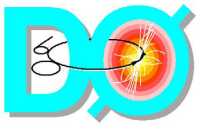
- L3 Supervisor & Coor get out of sync
  - You will see an error in the taker during the trigger download: timed out…still pending: l3dnl
    - Unable to load prescale, start a run, etc.
  - Resetting L3 is not the solution…
- The solution: Slow Down
  - Free your trigger. Verify your crate configurations are correct in CRATER. Make an entry in the logbook…
  - Wait 3-4 minutes – let the Supervisor clear its cache & get back in synch with COOR
  - Start over. Download trigger & prescales.
    - If you still have a problem, call DAQ Troubleshooter

How to Use Big Brother

- If you see problems in cpu or memory
  - Review the online node assignment on the DAQ Shifter web page (updated by Stu Fuess 10 March)
  - If it is a detector node, inform shifter their system may go critical (freeze up) if they don't clean up and/or close processes/applications on that node
  - DAQ Shifter is responsible for keeping d0ol07 healthy
    - Keep eye on d0ol03, d0ol04, d0ol12 as well
- Useful commands
  - setup d0online; d0ssh -l 'account' 'node'
    - E.g.: d0ssh -l d0cap d0ol04
  - ps -efwH | grep 'application string'
    - E.g.: ps -efwH | grep java
    - One gets the extended view (full path & process name) & the heirarchy when an application has multiple threads
  - kill -9 'process ID #'
    - Quickly kills the process & usually all dependent threads

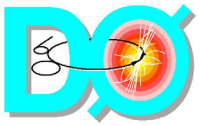
More on Big Brother

- Frequently disk space is getting full
  - d0ola/b/c disk flashes orange (warning) or red (critical)
  - /online; /home; /projects are most commonly used
  - There is a utility you can run that will help locate the greedy user & the largest used subdirectories
  - Go to the head of the directory that is overused
    - E.g: cd /home
  - Assuming you are logged in as d0run:
    - ~d0run/ddu -k > ~d0run/output.txt
      - This will take 10-15 minutes to run
    - Ignore any error messages on the command line
      - You don't have the authority to view the contents of some subdirectories
    - Scroll through the output.txt file - the numbers are in Kbytes & the subdirectories with the largest use are at the bottom
  - Send email to d0-online_users@fnal.gov with list of top users
    - Don't send complete list - only the last 50-100 subdirectories at most



Maximizing Readout System

- Muon readout crate errors
  - Instead of removing the Muon crate, the shifter may be able to disable one or more of the cards in that crate
    - This is called a configuration change – with approval of SC & coordination with Muon shifter, stop the run, make comments & log entry, and start a new run
      - Will not require a new trigger download
- Always verify the status of crates NOT in readout when you come on shift
  - Make sure whiteboard is correct (check email,logbook)
  - Talk with detector shifters or experts
    - Most commonly taken out: x52 & x53 (really CPS crates) and any or all of the L2 crates



Communication in the Control Room

- **Shift Captain (SC) needs to know what is going on**
  - *Remember*: the SCs are filling out checklists
    - Inform the SC before you Start or Stop a Run
    - The SC gives you the info on Run quality
    - Keep SC informed on: Crates in Run, Prescale Sets & Alarms
  - Confirm with SC that you issued store_begin & store_end
    - Michael Begel informed me that D0 has 27 stores with incorrect stop/start times & numbers - CDF only three times
    - The SC gets the call from the MCR when shot setup begins, when scraping ends (Store becomes official) & when the store will be dumped - the DAQ Shifter & SC must synchronize
- **Verbalize your activity**
  - Everyone should know when you:
    - Stop & Start a run
    - Pause & Resume a run
    - Having L3/DAQ problems
    - When you leave the control room
  - You should know what detector shifters are doing…